I CLAIM:

1. A method of minimizing oil consumption in a gas turbine engine, by avoiding reliance on air intake into the engine oil circuit for bearing chamber oil sealing purposes, the engine having an oil circuit including:

at least one bearing supporting at least one engine shaft at a support point along a shaft axis;

at least one bearing chamber enveloping each said bearing and maintaining a volume of oil with an oil-air interface in communication with a volume of air therein; and

oil circulation means in flow communication with each bearing chamber for supplying a flow of oil to a bearing chamber inlet and for evacuating spent oil from an outlet of the bearing chamber;

characterized in that, the method comprises:

sealing each bearing chamber with a hydropad seal disposed in sealing relation between the shaft and bearing chamber, the hydropad seal comprising an annular ring mounted to the shaft and an annular pad mounted to the chamber, the ring and pad having abutting seal surfaces;

rotating the ring during engine operation to cast oil radially outwardly from said shaft axis toward an outer periphery of the bearing chamber under centrifugal force;

collecting oil from the outer periphery of the bearing chamber and directing oil flow to the bearing chamber outlet.

2. A method according to claim 1 wherein the oil circulation operates independently of an oil-air separation function and an air venting function.

3. A method according to claim 1 wherein the abutting sealing surfaces of the hydropad remain engaged in frictional sealing relation below a lift off rotary speed.

4. A method according to claim 3 wherein the abutting sealing surfaces of the hydropad disengage when rotary speed exceeds the lift off rotary speed, the ring sealing surface casting oil outwardly under centrifugal force to impede oil passage through the hydropad seal.

5. A method according to claim 1 wherein cast oil is collected from the outer periphery of the bearing chamber using an oil scoop disposed on said periphery.

6. A gas turbine engine that reduces air intake into the engine oil circuit for bearing chamber oil sealing purposes, the engine having an oil circuit including:

at least one bearing supporting at least one engine shaft at a support point along a shaft axis;

at least one bearing chamber enveloping each said bearing and maintaining a volume of oil with an oil-air interface in communication with a volume of air therein; and

oil circulation means in flow communication with each bearing chamber for supplying a flow of oil to a bearing chamber inlet and for evacuating spent oil from an outlet of the bearing chamber;

characterized in that, the engine comprises:

a hydropad seal disposed in sealing relation between the shaft and a bearing chamber, the hydropad seal comprising an annular ring mounted to the shaft and an annular pad mounted to the chamber, the ring and pad having abutting seal surfaces;

turbine means mounted to the shaft for rotating the ring during engine operation to cast oil radially outwardly from said shaft axis toward an outer periphery of the bearing chamber under centrifugal force; and

wherein the oil circulation means includes oil scavenge means for collecting oil from the outer periphery of the bearing chamber and directing oil flow to the bearing chamber outlet.

7. An engine according to claim 6 wherein the oil circulation means operate independently of an oil-air separation function and an air venting function.

8. An engine according to claim 6 wherein the abutting sealing surfaces of the hydropad remain engaged in frictional sealing relation below a lift off rotary speed.

9. An engine according to claim 8 wherein the abutting sealing surfaces of the hydropad disengage when rotary

speed exceeds the lift off rotary speed, wherein the ring sealing surface casts oil outwardly under centrifugal force to impede oil passage through the hydropad seal.

10. An engine according to claim 6 wherein the oil scavenge means include an oil scoop disposed on the outer periphery of the bearing chamber.